

PATENT ABSTRACTS OF JAPAN

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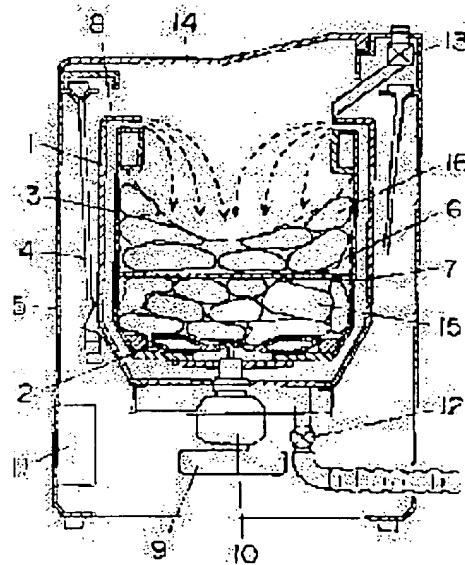
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(54) WASHING MACHINE

(57) Abstract:

PROBLEM TO BE SOLVED: To enable the one desired to be washed by no mechanical force and the other by a mechanical force to be separately washed at the same time in a washing machine which is provided with a net for placing the washings in a washing/dehydrating drum for washing.

SOLUTION: The washing/dehydrating drum 3 is rotatably installed in a water receiving drum 1 and a pulsator 2 is rotatably installed on a bottom surface of the washing/dehydrating drum 3 while a net 6 for placing washings is detachably provided almost horizontally halfway in the height direction of a side wall, the pulsator 2 or the washing/dehydrating drum 3 is driven by a motor 9. The motor 9 or the like is controlled by a control means. There are arranged a first step in which washings are housed into upper and lower parts of the net 6 for placing washings and the pulsator 2 is rotated and a second step in which the washing/dehydrating drum 3 is rotated to spray washing water into the washing/dehydrating drum 3 from between a water receiving drum cover 8 provided at an upper part of the water receiving drum 1 and the washing/dehydrating drum 3.



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CLAIMS

[Claim(s)]

[Claim 1] A water receiver, water receiver covering prepared in the upper part of said water receiver, and wash-cum-a dehydration tack arranged in said water receiver free [rotation], Pulsator arranged in a base of wash-cum-said dehydration tack free [rotation], and a network for washing installation formed in an abbreviation horizontal free [attachment and detachment] in the middle of the side wall height direction of wash-cum-said dehydration tack, The 1st stroke which it has [stroke] a driving means which drives said pulsator or wash-cum-a dehydration tack, and a control means which controls said driving means etc., and the washing is contained [stroke] to the bottom of said network for washing installation, and a top, and rotates said pulsator, A washing machine which has the 2nd stroke which is made to rotate said wash-cum-dehydration tack, and waters wash water into wash-cum-a dehydration tack from between said water receiver covering and wash-cum-dehydration tacks.

[Claim 2] Wash-cum-a dehydration tack is the washing machine according to claim 1 which prepared two or more steps of installation locations of a network for washing installation in the height direction.

[Claim 3] A network for washing installation is the washing machine according to claim 1 which prepared two or more ribs in the bottom at a radial.

[Claim 4] A washing machine according to claim 1 which has the 3rd stroke which rotates wash-cum-a dehydration tack while supplying water before the 1st and 2nd strokes.

[Claim 5] the 1st stroke which a control means ends the 3rd stroke when water supply amounts reach a network for washing installation mostly, and drives pulsator, and carries out predetermined time washing of the washing under a network for washing installation -- carrying out -- after that -- predetermined -- a washing machine according to claim 1 which supplies water to water level and was made to perform the 2nd stroke.

[Claim 6] A control means is alternation or the washing machine according to claim 1 or 4 which combines more than one and was made to perform a washing stroke about the 1st stroke and 2nd stroke.

[Claim 7] A control means is a washing machine given in any 1 term of claims 1, 4-6 which were made to perform wastewater while rotating wash-cum-a dehydration tack after a washing stroke or rinse stroke termination.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[The technical field to which invention belongs] This invention relates to the washing machine which forms and washes the network for washing installation in wash-cum-a dehydration tack.

[0002]

[Description of the Prior Art] Conventionally, through water, the washing machine rotated the washing in wash-cum-a dehydration tack, when pulsator contacted a direct washing, and it was washed.

[0003]

[Problem(s) to be Solved by the Invention] However, with such a conventional washing machine, the washing under washing contacted pulsator directly and there was a problem that the washing hurt. Moreover, on the other hand, there was also a problem that such a conventional washing machine could not fully drop mud dirt on machine lack of ability, either, like a child's white Sox. Moreover, the problem that water and a detergent will become uneconomical in recent years if the capacity of a washing machine becomes large and little division washing is carried out has also been produced.

[0004] It aims at washing the washing applying mechanical power and not washing [for this invention to solve the above-mentioned technical problem, and] it, and the washing applying and washing mechanical power at once, dividing them, and being made to be made.

[0005]

[Means for Solving the Problem] In order to attain the above-mentioned purpose, while this invention is arranged in a water receiver for wash-cum-a dehydration tack, enabling free rotation and arranges pulsator in a base of wash-cum-this dehydration tack free [rotation] A network for washing installation is formed in an abbreviation horizontal in the middle of the side wall height direction, enabling free attachment and detachment. The 1st stroke which pulsator or wash-cum-a dehydration tack is driven [stroke] by driving means, it constitutes [stroke] so that a driving means etc. may be controlled by control means, and the washing is contained [stroke] to the bottom of a network for washing installation, and a top, and rotates pulsator, Wash-cum-a dehydration tack is rotated and it has water receiver covering prepared in the upper part of a water receiver, and the 2nd stroke which waters wash water into wash-cum-a dehydration tack from between wash-cum-dehydration tacks.

[0006] Thereby, the washing to apply and wash mechanical power and the washing to wash without giving mechanical power can be divided, washed and made into coincidence.

[0007]

[A gestalt of the actual condition of invention] Water receiver covering which prepared invention of this invention according to claim 1 in the upper part of a water receiver and said water receiver, Wash-cum-a dehydration tack arranged in said water receiver free [rotation], and pulsator arranged in a base of wash-cum-said dehydration tack free [rotation], A network for washing installation formed in an abbreviation horizontal free [attachment and detachment] in the middle of the side wall height direction of wash-cum-said dehydration tack, The 1st stroke which it has [stroke] a driving means which drives said pulsator or wash-cum-a dehydration tack, and a control means which controls said driving means

etc., and the washing is contained [stroke] to the bottom of said network for washing installation, and a top, and rotates said pulsator, The washing [have the 2nd stroke which is made to rotate said wash-cum-dehydration tack, and waters wash water into wash-cum-a dehydration tack from between said water receiver covering and wash-cum-dehydration tacks, and] to apply and wash mechanical power by containing between pulsator and a network for washing installation, and rotating pulsator, mechanical power of direct pulsator joins the washing and it is based on churning of pulsator -- washing is performed strongly and dirt can be removed effectively. By placing the washing washing on the other hand without giving mechanical power after a network for washing installation, mechanical power of pulsator is not added but is washed by passage of wash water which waters from between water receiver covering and wash-cum-dehydration tacks. Therefore, even if it divides, washes and makes the washing to apply and wash mechanical power and the washing not to give mechanical power into coincidence, both wash conditions can be fulfilled.

[0008] In invention given in above-mentioned claim 1, wash-cum-a dehydration tack can prepare two or more steps of installation locations of a network for washing installation in the height direction, and invention according to claim 2 can apply the optimal mechanical power for the washing which could set a location of a network for washing installation as optimal location, and contained it under a network for washing installation according to an amount of the washing.

[0009] When pulsator rotates the washing which invention according to claim 3 was set to invention given in above-mentioned claim 1, and a network for washing installation prepared two or more ribs in the bottom at a radial, and was contained between a network for washing installation, and pulsator, the upper part of the washing is fixed with a rib of a radial prepared in the network bottom for washing installation. If it sees relatively, a radial rib and pulsator are mutually as the same as a rotation of pulsator is carrying out one half rotation to an opposite direction, and the washing is as the same as it is twisted in an opposite direction, it makes and it is washed by two pulsators from the upper and lower sides. Although mechanical power did not act on the washing enough since, as for mechanical power applied to the washing from pulsator by the conventional washing method, the upper part of the washing was free, while mechanical power acts on the washing enough by this configuration, it can act on homogeneity upwards from under the washing. Therefore, washing dispersion can also be made small while a detergency is improved. Moreover, since a relative position of the washing is being fixed, cloth relation also decreases.

[0010] Invention according to claim 4 is set to invention given in above-mentioned claim 1. Before the 1st and 2nd strokes Since wash water which has the 3rd stroke which rotates wash-cum-a dehydration tack, could dissolve a detergent at an early stage when water moved with centrifugal force by rotation of wash-cum-a dehydration tack at the time of water supply, and a detergent dissolved acts to the washing early, supplying water, wash time amount can be shortened.

[0011] Invention according to claim 5 is set to invention given in above-mentioned claim 1. A control means The 3rd stroke is ended when water supply amounts reach a network for washing installation mostly. The 1st stroke which drives pulsator and carries out predetermined time washing of the washing under a network for washing installation is performed. Even predetermined water supplies water after that, it is made to perform the 2nd stroke, a detergent dissolves immediately in the 1st stroke which drives pulsator first, and high-concentration wash water is made. With this high concentration wash water Since the washing under a network for washing installation is agitated with pulsator, while a detergency is improved, in the 2nd stroke turning around wash-cum-the following dehydration tack Since a detergent has melted enough, it can lose that a washing detergency of a network top for washing installation also becomes good, and a detergent of an insoluble solution remains in the washing.

[0012] In invention given in above-mentioned claims 1 or 4, alternation or when [even if it combines more than one, it is made to perform a washing stroke and a bubble is generated in the 2nd stroke,] it returns to the 1st following stroke, a bubble disappears the 1st stroke and 2nd stroke, and as for a control means, invention according to claim 6 can perform the 2nd stroke again. Thus, a detergency of the washing of the upper and lower sides of a network for washing installation can be raised, pressing down a bubble generated in the 2nd stroke by combining the 1st stroke and 2nd stroke by turns.

[0013] In invention given in above-mentioned claims 1, 4-6, invention according to claim 7 enables it to perform wastewater while a control means rotates wash-cum-a dehydration tack after a washing stroke or rinse stroke termination, it can make homogeneity able to move the washing at a periphery of wash-cum-a dehydration tack at the time of wastewater, and can make vibration at the time of dehydration small.

[0014]

[Example] Hereafter, the example of this invention is explained, referring to a drawing.

[0015] (Example 1) As shown in drawing 1, the water receiver 1 connoted and hung wash-cum-the dehydration tack 3 arranged in the pars basilaris ossis occipitalis for pulsator 2, enabling free rotation, and has hung it to the washing machine outer frame 5 with the rod 4. The network 6 for washing installation is attached in the interior of wash-cum-the dehydration tack 3 free [attachment and detachment] with the network installation rib 7 at the abbreviation horizontal. Two or more pairs of network installation ribs 7 are prepared in the height direction of wash-cum-the dehydration tack 3 two or more steps while they are formed in the wall of wash-cum-the dehydration tack 3 and attach the network 6 for washing installation.

[0016] The water receiver covering 8 is formed in the upper part of the water receiver 1, and when wash-cum-the dehydration tack 3 rotates, it constitutes so that wash water may be raised between wash-cum-the dehydration tack 3, and the water receiver 1, this wash water may be turned to the interior of wash-cum-the dehydration tack 3 from between the water receiver covering 8 and wash-cum-the dehydration tacks 3 and it may water in the shape of a waterfall.

[0017] A motor (driving means) 9 drives pulsator 2 or wash-cum-the dehydration tack 3 through a reducer style-cum-the clutch 10. The rotational frequency of a motor 9 is controlled by the control unit 11. A drain valve 12 drains the wash water in wash-cum-the dehydration tack 3, and a feed valve 13 supplies water to wash-cum-the dehydration tack 3. The upper part of wash-cum-the dehydration tack 3 is covered with the lid 14.

[0018] In wash-cum-the dehydration tack 3, the washing 16 to wash without containing the washing 15 to apply and wash mechanical power to the network 6 down side for washing installation and applying mechanical power to it at the network 6 bottom for washing installation is contained.

[0019] The control unit 11 is constituted as shown in drawing 2, it washes a control means 17 based on the contents of a setting inputted by the actuation display means 18, controls each stroke of a rinse and dehydration sequentially, and controls sequentially a motor 9, a feed valve 13, a drain valve 12, etc. through the motorised means 19 and the power switching means 20. The storage means 21 has memorized data required for the sequential control by the control means 17 etc.

[0020] The rotor location detection means 22 detects a rotor location and a rotational frequency based on the signal from a motor 9. The clothes volume judging means 23 judges clothes volume based on the data of the rotor location detection means 22, and inputs it into a control means 17. The water-level-detection means 24 detects the water level of the water receiver 1, and inputs it into a control means 17. A power circuit 25 changes a source power supply 26 into a direct current, and supplies direct current power to motorised means 19 grade. 27 is an electric power switch.

[0021] Drawing 3 shows a washing condition, drawing 3 (a) contains the washing 15 and 16 to the bottom of the network 6 for washing installation, and a top, the 1st stroke which rotates pulsator 2 is shown, and drawing 3 (b) shows the 2nd stroke which is made to rotate wash-cum-the dehydration tack 3, and waters wash water into wash-cum-the dehydration tack 3 from the upper part between the water receiver 1 and wash-cum-the dehydration tack 3.

[0022] Actuation is explained in the above-mentioned configuration. First, the washing 15 to apply and wash mechanical power is put into wash-cum-the dehydration tack 3 after throwing in the detergent of the specified quantity, and the network 6 for washing installation is set using the rib 7 for installation. At this time, a suitable location is selected according to the amount of the washing out of two or more ribs 7 for installation prepared in the height direction of wash-cum-the dehydration tack 3. the washing 16 to wash next without applying mechanical power -- supplying -- a feed valve 13 -- ON -- carrying out -- predetermined -- water is supplied to water level.

[0023] Next, as shown in drawing 3 (a), turning-on-and-off / reversal drive of the motor 9 is carried out, and the reversal drive of the pulsator 2 is carried out through a reducer style-cum-the clutch 10 at right and left. That is, the 1st stroke is performed. Thereby, the washing 15 under the network 6 for washing installation is washed by the mechanical power by pulsator 2. On the other hand, the mechanical power of pulsator 2 is not applied to the washing 16 on the network 6 for washing installation at all, but the effect by the stream is only received in it a little. The right-and-left reversal drive of this pulsator 2 is shifted to the 2nd following stroke after predetermined time activation.

[0024] A motor 9 and wash-cum-the dehydration tack 3 are directly linked with a reducer style-cum-the clutch 10, and an one direction is made to rotate wash-cum-the dehydration tack 3 continuously by the drive of a motor 9 in the 2nd washing stroke. As shown in drawing 3 (b), by this the wash water in wash-cum-the dehydration tack 3 Centrifugal force extrudes besides wash-cum-the dehydration tack 3 like an arrow head, and the extruded wash water Between the water receiver 1 and wash-cum-the dehydration tacks 3 is gone up with sufficient vigor like an arrow head, a direction is changed with the water receiver covering 8, and it waters toward the interior of wash-cum-the dehydration tack 3 from between the water receiver covering 8 and wash-cum-the dehydration tacks 3.

[0025] By repeating this, in the inside of the washing 15 and 16, wash water is passed and passage washing is performed. Although this passage washing is inferior to churning washing by pulsator 2 in a detergency, a cloth bruise and cloth relation are zero mostly. Predetermined time activation of this stroke is carried out, and washing is ended.

[0026] Thus, the network 6 for washing installation can be formed, and the washing to apply mechanical power and wash finely and the washing to wash without damaging without giving mechanical power can be divided, washed and made into coincidence by [the] dividing and putting in the washing up and down and performing the 1st stroke and 2nd stroke.

[0027] (Example 2) As shown in drawing 4 , the network 28 for washing installation has prepared much hole 28a for wash water to pass, and provides two or more rib 28b in the radial at the bottom. Other configurations are the same as the above-mentioned example 1.

[0028] Actuation is explained in the above-mentioned configuration. When pulsator rotates the washing between the network 28 for washing installation, and pulsator by having prepared two or more rib 28b in the network 28 bottom for washing installation at the radial, the upper part of the washing is fixed by rib 28b of the radial prepared in the network 28 bottom for washing installation. If it sees relatively, rib 28b of a radial and pulsator are mutually as the same as the rotation of pulsator is carrying out one half rotation to an opposite direction, and the washing is as the same as it is twisted in an opposite direction, it makes and it is washed by two pulsators from the upper and lower sides.

[0029] Although mechanical power did not act on the washing enough since, as for the mechanical power applied to the washing from pulsator by the conventional washing method, the upper part of the washing was free, while mechanical power acts on the washing enough by this configuration, it can act on homogeneity upwards from under the washing. Therefore, washing dispersion can also be made small while a detergency is improved. Moreover, since the relative position of the washing is being fixed, cloth relation also decreases.

[0030] As shown in drawing 5 , (Example 3) A control unit 29 The 1st stroke which the washing 15 and 16 is contained [stroke] to the bottom of the network 6 for washing installation, and a top, and rotates pulsator 2, It has the 3rd stroke which rotates wash-cum-the dehydration tack 3, supplying water before the 2nd stroke which is made to rotate wash-cum-the dehydration tack 3, and waters wash water into wash-cum-the dehydration tack 3 from the upper part between the water receiver 1 and wash-cum-the dehydration tack 3. Other configurations are the same as the above-mentioned example 1.

[0031] Actuation is explained in the above-mentioned configuration. The detergent and the washing of the specified quantity are first fed into wash-cum-the dehydration tack 3. A motor 9 and wash-cum-the dehydration tack 3 are directly linked with a reducer style-cum-the clutch 10, and an one direction is made to rotate wash-cum-the dehydration tack 3 continuously by the drive of a motor 9 at the same time it turns ON a feed valve 13 and next starts water supply.

[0032] Thereby, as shown in drawing 5 , with a detergent, the water to which water was supplied in

wash-cum-the dehydration tack 3 passes the washing 15 and 16 in wash-cum-the dehydration tack 3 according to centrifugal force, and moves in the direction of the water receiver 1. At this time, a detergent is dissolved with resistance by the washing 15 and 16, and the water pressure by centrifugal force. Thus, since the wash water which the detergent dissolved and the detergent dissolved acts to the washing early before water supply is completed, wash time amount can be shortened.

[0033] (Example 4) the 1st stroke which the control unit 29 in drawing 5 ends the 3rd stroke when water supply amounts reach the network 6 for washing installation mostly, and drives pulsator 2, and carries out predetermined time washing of the washing 15 under the network 6 for washing installation -- carrying out -- after that -- predetermined -- water is supplied to water level and it is made to perform the 2nd stroke. Other configurations are the same as the above-mentioned examples 1 or 3.

[0034] Actuation is explained referring to drawing 6 in the above-mentioned configuration. First, the detergent of the specified quantity is fed into wash-cum-the dehydration tack 3 at step 31, the washing 15 to apply mechanical power at step 32 and wash finely next, is thrown in, the network 6 for washing installation is installed at step 33, and the delicate washing 16 to wash without giving mechanical power on it at step 34 is thrown in.

[0035] Next, a feed valve 13 is turned ON at step 35, and wash-cum-the dehydration tack 3 is rotated at the same time it starts water supply. By step 36, with the water-level-detection means 24, at least the water in wash-cum-the dehydration tack 3 detects X, and is compared with the 1st water level H1 at step 37. Here, water level H1 is made into the water level of the height of the network 6 for abbreviation washing installation. In step 37, at least the detected water will progress to step 38, if X becomes $X \geq H1$, the 3rd stroke is ended, rotation of water supply and wash-cum-a dehydration tack is suspended, and it shifts to the 1st stroke agitated with pulsator 2 at step 39.

[0036] this stroke -- setting -- a detergent -- immediately -- dissolving -- water level -- predetermined -- since it is lower than water level, high-concentration wash water is made. Since the washing 15 under the network 6 for washing installation is agitated with pulsator 2 with this high concentration wash water, it is washed with a detergency higher than usual. churning according to pulsator 2 at step 41 if the churning time amount T of pulsator 2 becomes more than predetermined time T1 at step 40 -- stopping - - step 42 -- again -- supplying water -- step 43 -- predetermined -- if water level H2 is reached, water supply will be suspended at step 44, wash-cum-the dehydration tack 3 will be rotated at step 45, and it will go into the 2nd stroke.

[0037] According to this example, in thus, the 1st stroke which drives pulsator 2 first Since a detergent dissolves immediately and washes with high-concentration wash water, while the detergency of the washing under the network 6 for washing installation is improved, in the 2nd stroke which rotates wash-cum-the following dehydration tack 3 Since the detergent has melted enough, the detergency of the washing of the network 6 top for washing installation and the problem that can improve and the detergent of an insoluble solution remains in the washing are lost.

[0038] (Example 5) the control unit 29 in drawing 5 shortens ***** of the 1st stroke and the 2nd stroke, respectively, repeats and performs it, and is the same as the former as total -- it is made to carry out time amount washing. Other configurations are the same as the above-mentioned examples 1 or 3.

[0039] Actuation is explained referring to drawing 7 in the above-mentioned configuration. Drawing 7 (a) is washed about by the 1st line which agitates the first half of washing time amount with pulsator 2, and washes the second half about by the 2nd line which rotates wash-cum-the dehydration tack 3. The axis of ordinate of drawing 7 (a) shows the growth degree of the bubble at the time of washing, and growth of a bubble shows constitutionally that even H0 is [of a washing machine] tolerance. Although a bubble is hardly generated in the 1st stroke so that this graph may show, in the 2nd stroke, with time amount, growth of a bubble will become large and will amount to H0 in the place of the abbreviation 9 minutes of washing time amount.

[0040] Therefore, if it is as it is, washing must be finished with 9 minutes and the 2nd stroke cannot do only predetermined one half. In order to solve this technical problem, since the bubble generated about in the 2nd line by shortening the 1st stroke and 2nd stroke, respectively and performing them repeatedly disappears about by the 1st line as shown in drawing 7 (b), by this example, growth of a bubble can be

suppressed less than [H0].

[0041] Thus, the detergency of the washing of the upper and lower sides of the network 6 for washing installation can be raised, pressing down the bubble generated in the 2nd stroke by combining the 1st stroke by turns.

[0042] In addition, although the 1st stroke and 2nd stroke are repeated alternately [same] with time amount every in this example as shown in drawing 7 (b), the merits and demerits of time amount may be freely combined due to growth of a bubble, and a detergency and a cloth bruise.

[0043] (Example 6) As shown in drawing 8, the control unit 30 is made to drain, rotating wash-cum-the dehydration tack 3 after a washing stroke or rinse stroke termination. Other configurations are the same as the above-mentioned examples 1-5.

[0044] Actuation is explained in the above-mentioned configuration. When carrying out vertical division washing of the washing 15 and 16 with the network 6 for washing installation of this invention, it is very difficult to balance the washing at the time of dehydration. When artificers rotated wash-cum-the dehydration tack 3 as this solution in the condition that water of enough is in wash-cum-the dehydration tack 3, it examined draining the washing, maintaining this condition to the periphery of wash-cum-the dehydration tack 3 with centrifugal force with water paying attention to approaching homogeneity.

[0045] First, wastewater is started, when wash-cum-the dehydration tack 3 is rotated and 120 - 130 r/min is reached after washing termination or rinse termination, before going into wastewater. When a rotational frequency is raised gradually and it next goes as wastewater advances, it is in the middle of wastewater, and the dotted line of drawing 8 comes to show the water surface in wash-cum-the dehydration tack 3. Wastewater is continued, and if it shifts to dehydration as it is when wastewater is completed mostly, the periphery of wash-cum-the dehydration tack 3 can be made, as for the washing, to stick to homogeneity.

[0046] While dehydration can start with sufficient balance and being able to make vibration at the time of dehydration small by doing in this way, time amount compaction can also be aimed at.

[0047] In addition, in this example, although wash-cum-the dehydration tack 3 is rotated before wastewater, when the last elapsing is [the last] easy wash is the 2nd stroke, you may shift to wastewater as it is.

[0048]

[Effect of the Invention] According to invention of this invention according to claim 1, as mentioned above A water receiver, Water receiver covering prepared in the upper part of said water receiver, and wash-cum-the dehydration tack arranged in said water receiver free [rotation], The pulsator arranged in the base of wash-cum-said dehydration tack free [rotation], and the network for washing installation formed in the abbreviation horizontal free [attachment and detachment] in the middle of the side wall height direction of wash-cum-said dehydration tack, The 1st stroke which it has [stroke] the driving means which drives said pulsator or wash-cum-a dehydration tack, and the control means which controls said driving means etc., and the washing is contained [stroke] to the bottom of said network for washing installation, and a top, and rotates said pulsator, Since it has the 2nd stroke which is made to rotate said wash-cum-dehydration tack, and waters wash water into wash-cum-a dehydration tack from between said water receiver covering and wash-cum-dehydration tacks, the washing to apply and wash mechanical power The mechanical power of direct pulsator can be added between pulsator and the network for washing installation, and dirt can be removed effectively. The washing to wash on the other hand without giving mechanical power is washed by placing after the network for washing installation by the passage of wash water which waters from between water receiver covering and wash-cum-dehydration tacks. Therefore, even if it divides, washes and makes the washing to apply and wash mechanical power and the washing not to give mechanical power into coincidence, both wash conditions can be fulfilled.

[0049] Moreover, according to invention according to claim 2, since two or more steps of installation locations of the network for washing installation were prepared in the height direction, according to the amount of the washing, wash-cum-a dehydration tack can set the location of the network for washing installation as the optimal location, and can apply the optimal mechanical power for the washing

contained under the network for washing installation.

[0050] According to invention according to claim 3, moreover, the network for washing installation Since two or more ribs were prepared in the bottom at the radial, the washing contained between the network for washing installation, and pulsator Since the upper part of the washing is fixed with the rib of the radial prepared in the network bottom for washing installation when pulsator rotates While mechanical power acts on the washing enough, it can act on homogeneity upwards from under the washing, and washing dispersion can also be made small while a detergency is improved. Moreover, since the relative position of the washing is being fixed, cloth relation also decreases.

[0051] Moreover, since according to invention according to claim 4 it has the 3rd stroke which rotates wash-cum-a dehydration tack, supplying water before the 1st and 2nd strokes and the wash water which could dissolve the detergent at an early stage at the time of water supply, and the detergent dissolved at it acts to the washing early, wash time amount can be shortened.

[0052] According to invention according to claim 5, moreover, a control means The 3rd stroke is ended when water supply amounts reach the network for washing installation mostly. The 1st stroke which drives pulsator and carries out predetermined time washing of the washing under the network for washing installation is performed. Since even predetermined water supplies water after that and it was made to perform the 2nd stroke, a detergent dissolves immediately in the 1st stroke which drives pulsator, and high-concentration wash water is made. With this high concentration wash water Since the washing under the network for washing installation is agitated with pulsator, while a detergency is improved, in the 2nd stroke turning around wash-cum-the following dehydration tack Since the detergent has melted enough, it can lose that the washing detergency of the network top for washing installation also becomes good, and the detergent of an insoluble solution remains in the washing.

[0053] Moreover, according to invention according to claim 6, a control means can raise the detergency of the washing of the upper and lower sides of the network for washing installation, suppressing the 1st stroke and 2nd stroke for alternation or the bubble generated in the 2nd stroke, since more than one are combined and it was made to perform a washing stroke.

[0054] Moreover, according to invention according to claim 7, after a washing stroke or rinse stroke termination, since it was made to perform wastewater, rotating wash-cum-a dehydration tack, a control means can make homogeneity able to move the washing at the periphery of wash-cum-a dehydration tack at the time of wastewater, and can make vibration at the time of dehydration small.

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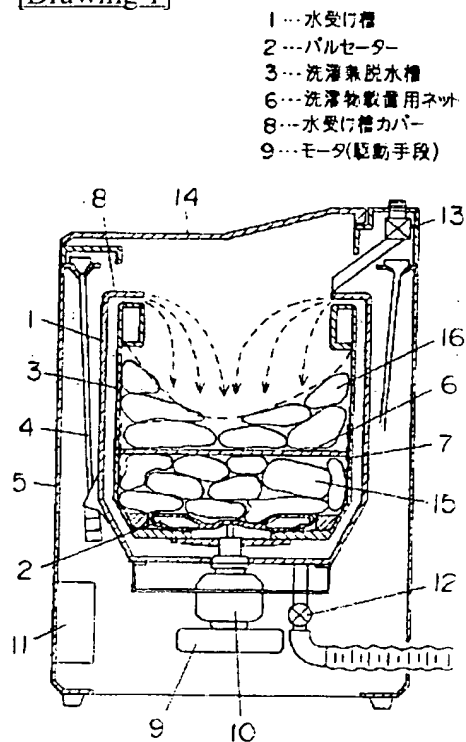
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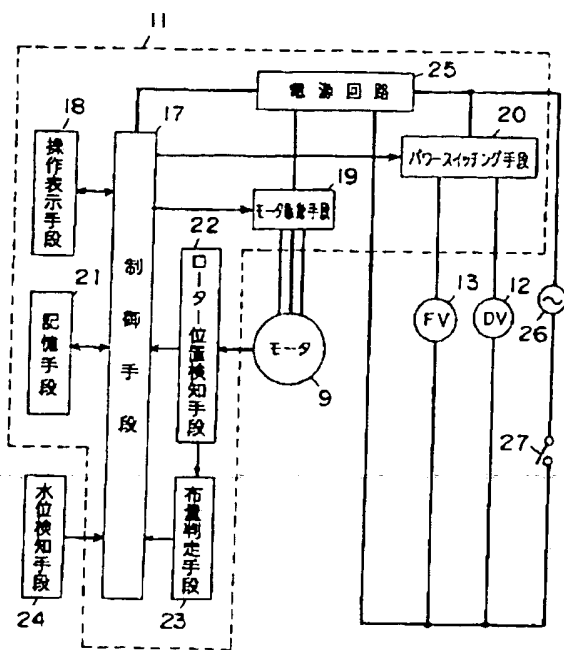
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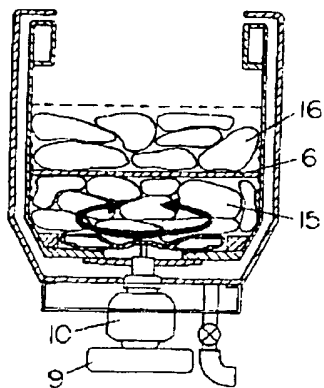
[Drawing 1]



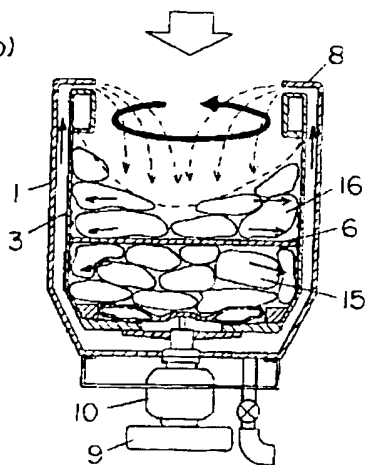
[Drawing 2]



[Drawing 3]
(a)

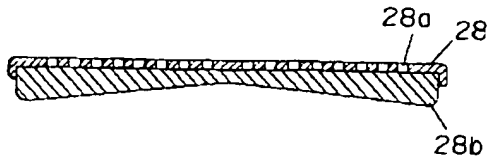


(b)

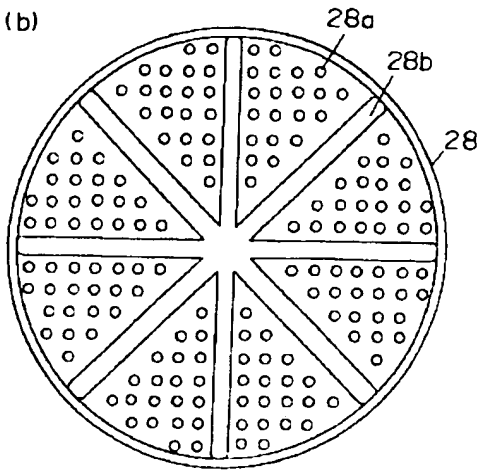


[Drawing 4]

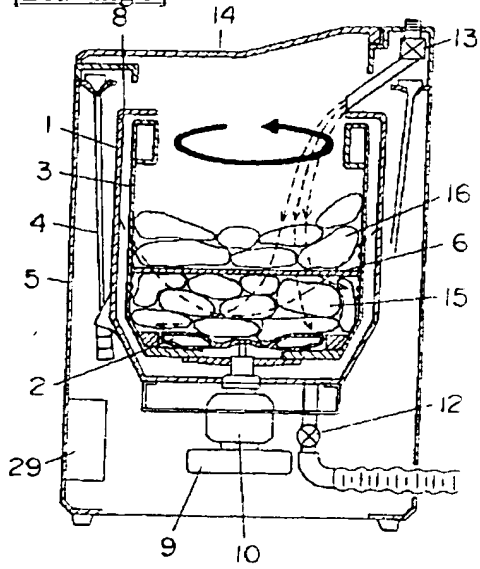
(a)



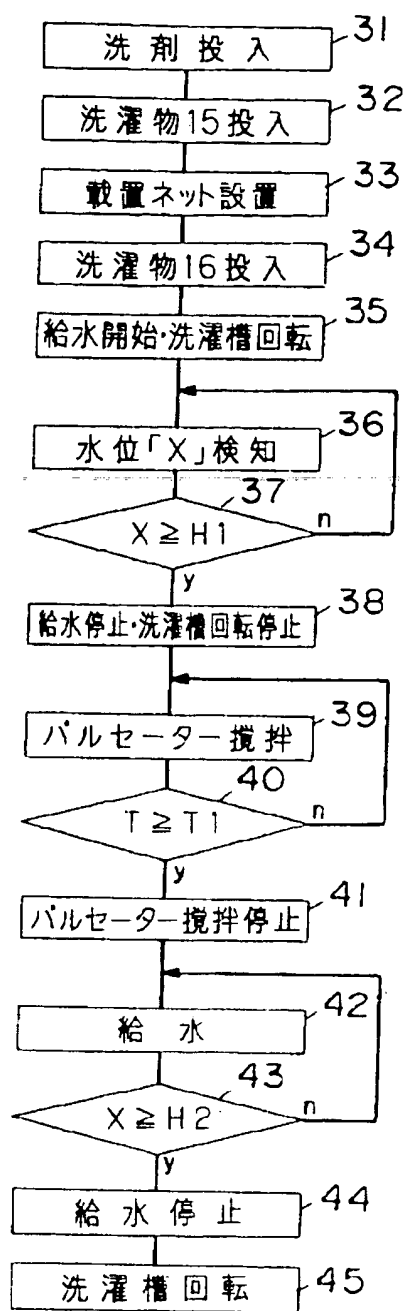
(b)



[Drawing 5]

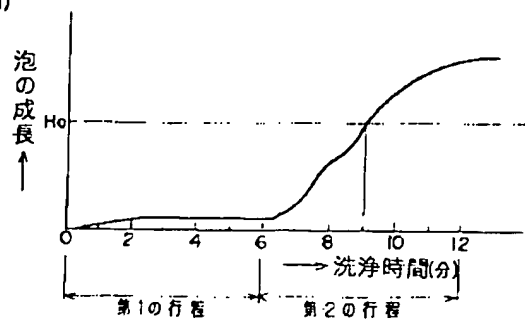


[Drawing 6]

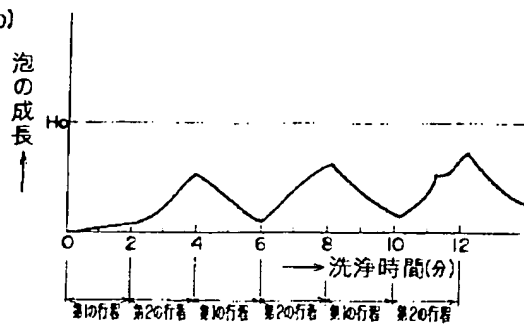


[Drawing 7]

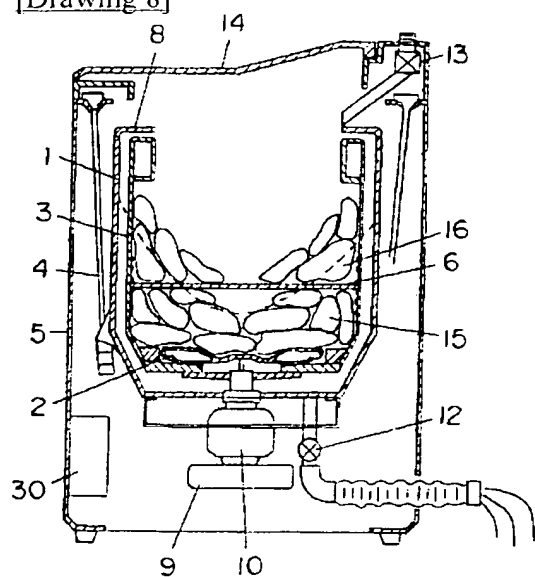
(a)



(b)



[Drawing 8]



[Translation done.]

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